

Enquiries directed to a few Ontario herbaria have failed to add to this list. Also, from enquiries made, it does not appear that any of these colonies have attracted further notice. In each case the possibility of spread had been pointed out, perhaps to good purpose.

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## Linnaeus' Rules of Nomenclature

### A CHAPTER IN THE HISTORY OF PLANT NAMES

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In a modern textbook of botany we read the naïve assertion that "botanists began the use of Latin names in order to avoid confusion." Actually the use of Latin by scholars was a survival, not a beginning; a survival from times when Latin was the spoken language of the civilized world. It has not always avoided confusion. Botanists of the eighteenth century thought it strange to use names other than Latin, and Linnaeus habitually wrote in Latin to his scientific correspondents. This helps explain why we have had to wait 200 years for a translation into English of an important work by the father of botany.

The *Critica Botanica* of Linnaeus now appears in a translation by the late Sir Arthur Hort, revised by Miss M. L. Green, and published by the Ray Society. In 1736 Linnaeus produced his *Fundamenta Botanica*, a small volume in which he expounded the science of botany as he understood it; one of the earliest of textbooks. Chapters VII-IX contained, in 115 brief numbered paragraphs, his proposals for a system of nomenclature of plants, which should reduce the prevailing chaos to rational and orderly procedure. The following year, largely because of the opposition of other botanists to some of his suggestions, he published the 115 aphorisms with full discussions and exemplification; this was the *Critica*. The *Fundamenta* formed the basis of the *Philosophia Botanica* of 1751, in which the discussion of nomenclature was again condensed.

Though he later abandoned many of his own ideas, these earlier works by Linnaeus are of value in tracing the development of his thought and in illuminating the problems which he encountered. He here propounds the rules, so long taken for granted that it is now difficult to imagine the conditions that made them necessary, that

one genus should have but one name and that that name should consist of but one word. "Let every species of plant bear on its standard the name of its genus, which marks the regiment in which it serves." Many pages are devoted to the principles which should govern the creation of generic names. Linnaeus himself later disregarded many of these, as that "generic words compounded of two entire Latin words are scarcely to be tolerated," which would eliminate *Passiflora*, *Saxifraga*, *Sempervivum*. It is with a twinge of regret, hardened though we may be by the perversions of modern scientific jargon, that we read his strictures on hybrid names (compounded from roots of more than one tongue) "of which the philologists make violent complaint;" and against "ell-long words" (*verba sesquipedalia*), such as *Mesembryanthemum*. A faint foreshadowing of a list of *nomina conservanda* is to be seen in the admission that "generic names which have been bestowed without harm to Botany should, other things being equal, be allowed to pass."

Of all his comments on generic names the following, which sheds some light on Linnaeus' view of the stability of species, is perhaps the most interesting: "You may observe, they say, in *Hemerocallis* (for instance) that the root is exactly that of an Asphodel, and the flower exactly that of a Lily: is not then 'Lilio-asphodelus' an excellent name for it? No, I am sorry that I cannot see their point. . . . If there were such a thing as metamorphosis in plants, so that from one species could arise another belonging to a different genus . . . such names would no doubt be excellent and admirably suited to such plants." If he had known of *Raphano-Brassica* his conclusion must have been different.

The specific names of this work are the so-called "polynomials"—descriptive phrases rather than names in the modern sense, expressing "the Differentia which is imprinted on the plant itself." Most of the argument is directed to the elucidation of the essential characters, those which may properly be considered to distinguish species. "The specific name has no description but is itself a diagnosis." Size, habitat, scent, taste must not be used in the specific name, but "only those characters . . . which are constant, certain and organic." He quotes from Sloan "an appalling diagnosis: *Arum summis labris degustantes mutos reddens*" (the arum which strikes dumb those who only just taste it; indeed an unfortunate choice of character for identification). The specific names

are to be wholly descriptive: "let the reproaches bestowed on plants disappear; we do not recognize that one plant is more 'true' than another, or 'spurious' or 'counterfeit' or 'peculiar.'" The characters used must be only those which distinguish the species of the same genus; and "a specific name without a generic name is like a bell without a clapper." A synoptic name "consists of the appropriate branches of a dichotomous key to all the species of a genus," while an essential name, which should replace the synoptic name when possible, "indicates a characteristic difference which is unique and exactly appropriate to that species only to which it is applied." Here and elsewhere we see that pursuit of brevity which finally led to the binomial system. The "synoptic" and "essential" diagnoses of species still characterize contrasting styles in the writing of manuals.

The adoption of the binomial system necessitated a revolution in Linnaeus' point of view between 1737 and 1753, the extent of which may be appreciated from the following: "Nothing is commoner than to take a part for the whole, and call a plant *alba*, which merely has white flowers. . . . But 'see yonder the evening-star; make haste, my kids, to the fold.' At length let the day of clouds come to an end, to be succeeded by a morrow of clear shining." In the effulgence of the new day *Saxifraga alba* was to be replaced by *Saxifraga corollis albis*.

There is no indication anywhere that a species can have but one valid name, and no principle of priority is possible for names that are diagnoses. Indeed "when we assign various synonyms to the same species, it is necessary that the first place should be allotted to the best synonym. . . . If it is decided that none of the synonyms is really suitable for the plant, then necessity compels us to make up a new one." With this we may contrast his attitude towards generic names: "New generic names are not to be coined, so long as suitable synonyms are available."

Linnaeus regarded it as a solemn duty to perpetuate the names of great botanists in generic names (though at this time he forbade it in specific names). Since in this he encountered lively opposition, he went to some trouble to justify it. "It is commonly believed that the name of a plant which is derived from that of a Botanist shows no connexion between the two. But anyone who has but slight knowledge of the history of letters will easily discover a link

by which to connect the name with the plant, and indeed there will be such charm in the association that it will never fade from his memory. I will set forth a few instances:

“*Bauhinia* has two-lobed leaves, or two as it were growing from the same base—being called after the noble pair of brothers, Bauhin.

“*Scheuchzeria* is grassy and alpine, being called after the famous pair of brothers, Scheuchzer, of whom the one was eminent for his knowledge of grasses, the other for his knowledge of alpine plants. . . .

“*Linnaea* was named by the celebrated Gronovius and is a plant of Lapland, lowly, insignificant, disregarded, flowering but for a brief space—from Linnaeus who resembles it.”

Finally, lest our horticultural friends should take too much heart from Linnaeus’ gibes at “ell-long,” “difficult,” and “unpleasant” names, let them note that he regarded (at this time) all varieties as monstrosities, and on horticultural names delivered himself as follows: “Botanists differ from florists in their conception of varieties in this respect: that the former bestow varietal names by way of defining and expressing in words some unique characteristic in the variety: and this seems to me a fitting proceeding: but the latter do reverence to the objects of their worship with names showing their devotion, lest anyone with unwashed hands should approach the mystery of their noble art.”

What would he think today?

NEW YORK BOTANICAL GARDEN  
NEW YORK, N. Y.

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### An Unstable *Dicentra*

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In a number of gardens, including the Thompson Memorial Rock Garden of the New York Botanical Garden and the Lown Memorial Garden at Poughkeepsie, N. Y., *Dicentra oregana* Eastw. has become larger statured, less glaucous leaved, and pink-flowered, a condition in which it appears to be indistinguishable from *D. formosa*. This would seem sufficient grounds upon which to challenge the specific standing of *D. oregana*.